

Eastman 9921 PET Film (discontinued **)

Category : Polymer , Film , Thermoplastic , Polyester, TP , Polyethylene Terephthalate (PET) , Polyethylene Terephthalate (PET), Unreinforced

Material Notes:

VORIDIAN polymer 9921 is a copolymer PET that has been crystallized. Color concentrates of polymer 9921 are available on request. Applications/Uses Automotive parts containers Food packaging Household products containers Pharmaceutical containers Medical Health and Nutrition Containers Food-contact containers Carbonated soft drink containers

Order this product through the following link:

http://www.lookpolymers.com/polymer_Eastman-9921-PET-Film-nbspdiscontinued-.php

| Physical Properties | Metric | English | Comments |
|-----------------------------|-------------------------------------|---|------------------------------------|
| Bulk Density | 0.817 g/cc | 0.0295 lb/in ³ | Poured; ASTM D1895 |
| | 0.881 g/cc | 0.0318 lb/in ³ | Vibrated; ASTM D1895 |
| Density | 1.33 g/cc | 0.0480 lb/in ³ | Film; ASTM D1505 |
| | 1.40 g/cc | 0.0506 lb/in ³ | Crystalline Density; ASTM D1505 |
| Melt Density | 1.20 g/cc | 0.0434 lb/in ³ | ASTM D1238 |
| | @Temperature 285 °C | @Temperature 545 °F | |
| Particle Size | 2500 µm | 2500 µm | Pellet Size |
| Water Vapor Transmission | 6.00 g/m ² /day | 0.386 g/100 in ² /day | ASTM F372 |
| Oxygen Transmission | 5.10 cc-mm/m ² -24hr-atm | 13.0 cc-mil/100 in ² -24hr-atm | ASTM D3985 |
| Carbon Dioxide Transmission | 28.0 cc-mm/m ² -24hr-atm | 71.1 cc-mil/100 in ² -24hr-atm | ASTM D1434 |
| Viscosity Measurement | 0.74 | 0.74 | Intrinsic; EMN-A-AC-G-V-1 |
| | 0.78 - 0.82 | 0.78 - 0.82 | Pellet, Intrinsic; VGAS-A-AN-G-V-1 |
| Thickness | 250 microns | 9.84 mil | |

| Mechanical Properties | Metric | English | Comments |
|------------------------------------|----------|----------|-----------|
| Film Tensile Strength at Yield, MD | 58.0 MPa | 8410 psi | ASTM D882 |
| Film Tensile Strength at Yield, TD | 57.0 MPa | 8270 psi | ASTM D882 |
| Film Elongation at Break, MD | 300 % | 300 % | ASTM D882 |
| Film Elongation at Break, TD | 200 % | 200 % | ASTM D882 |
| Film Elongation at Yield, MD | 4.0 % | 4.0 % | ASTM D882 |

| Film Elongation at Yield, TD Mechanical Properties | 4.0 % Metric | 4.0 % English | ASTM D882 Comments |
|---|--|---|---|
| Izod Impact, Unnotched (ISO) | NB | NB | ISO 180 |
| | 170 kJ/m ² @Temperature -40.0 °C | 80.9 ft-lb/in ² @Temperature -40.0 °F | ISO 180 |
| Tear Strength, Total | 15.0 N | 3.37 lb (f) | Split Tear Method, 254mm/min, MD; ASTM D1938 |
| | 16.0 N | 3.60 lb (f) | Split Tear Method, 254mm/min, TD; ASTM D1938 |
| | 102 N | 22.9 lb (f) | PPT Tear Resistance, MD; ASTM D2582 |
| | 120 N | 27.0 lb (f) | PPT Tear Resistance, TD; ASTM D2582 |
| Tear Strength | 54.0 kN/m | 308 pli | Trouser Tear Resistance, MD; ISO 6383-1 |
| | 59.0 kN/m | 337 pli | Trouser Tear Resistance, TD; ISO 6383-1 |
| Elmendorf Tear Strength, MD | 4.00 g/micron | 102 g/mil | ASTM D1922 |
| Elmendorf Tear Strength, TD | 5.20 g/micron | 132 g/mil | ASTM D1922 |
| Dart Drop | 1.60 g/micron | 40.6 g/mil | at -18°C; ASTM D1709 |
| | 2.00 g/micron | 50.8 g/mil | 23°C; ASTM D1709 |
| Film Tensile Strength at Break, MD | 58.0 MPa | 8410 psi | ASTM D882 |
| Film Tensile Strength at Break, TD | 39.0 MPa | 5660 psi | ASTM D882 |

| Thermal Properties | Metric | English | Comments |
|------------------------|-------------------------------------|--|------------|
| Heat of Fusion | 56.0 J/g | 24.1 BTU/lb | ASTM E793 |
| Specific Heat Capacity | 1.10 J/g-°C | 0.263 BTU/lb-°F | ASTM E1269 |
| | 1.30 J/g-°C @Temperature 80.0 °C | 0.311 BTU/lb-°F @Temperature 176 °F | ASTM E1269 |
| | 1.40 J/g-°C @Temperature 100 °C | 0.335 BTU/lb-°F @Temperature 212 °F | ASTM E1269 |
| | 1.90 J/g-°C @Temperature 200 °C | 0.454 BTU/lb-°F @Temperature 392 °F | ASTM E1269 |
| | 2.10 J/g-°C @Temperature 280 °C | 0.502 BTU/lb-°F @Temperature 536 °F | ASTM E1269 |

| Thermal Properties | Metric | English | Comments |
|--------------------|--------|---------|--------------------------------|
| Melting Point | 240 °C | 240 °F | Peak Melting Point; ASTM D3418 |

| Optical Properties | Metric | English | Comments |
|-----------------------|--------|---------|-----------------------------------|
| Haze | 0.80 % | 0.80 % | ASTM D1003 |
| Gloss | 108 % | 108 % | at 45°; ASTM D2457 |
| Transmission, Visible | 85 % | 85 % | Transparency; ASTM D1746 |
| | 91 % | 91 % | Total Transmittance; ASTM D1003 |
| | 93 % | 93 % | Regular Transmittance; ASTM D1003 |

| Descriptive Properties | Value | Comments |
|------------------------|------------|---------------------|
| Acetaldehyde | <3ppm | VKCA-A-AS-G-GC-0001 |
| Color, CIE a* | -2.5 ± 1.5 | VGAS-A-AN-G-RS-001 |
| Color, CIE b* | 0.3 ± 1.5 | VGAS-A-AN-G-RS-001 |
| Color, CIE L* | 77.5 min | VGAS-A-AN-G-RS-001 |
| Fines, wt%, max | 0.05 | VGAS-A-AN-G-GA-1 |
| Pellet Shape | Cubical | |

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